

Students' perceptions of using ChatGPT in a physics class as a virtual tutor

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Abstract

The latest development of Generative Artificial Intelligence (GenAI), particularly ChatGPT, has drawn the attention of educational researchers and practitioners. We have witnessed many innovative uses of ChatGPT in STEM classrooms. However, studies regarding students' perceptions of ChatGPT as a virtual tutoring tool in STEM education are rare. The current study investigated undergraduate students' perceptions of using ChatGPT in a physics class as an assistant tool for addressing physics questions. Specifically, the study examined the accuracy of ChatGPT in answering physics questions, the relationship between students' ChatGPT trust levels and answer accuracy, and the influence of trust on students' perceptions of ChatGPT. Our finding indicates that despite the inaccuracy of GenAI in question answering, most students trust its ability to provide correct answers. Trust in GenAI is also associated with students' perceptions of GenAI. In addition, this study sheds light on students' misconceptions toward GenAI and provides suggestions for future considerations in AI literacy teaching and research.